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**Synthesis and Characterization of Atomically Precise Copper Nanoclusters**

Atomically precise group 11 nanoclusters (NCs) are currently of intense interest, both for their fundamental properties and for their potential use in a wide variety of applications, including catalysis. As a result, the last 5 years have seen significant progress in the synthesis of well-defined, mono-disperse group 11 nanoclusters. Yet, while many examples of thiol-passivated silver and gold NCs are now known, comparable copper NCs have remained elusive due, in part, to their higher air-sensitivity. In this presentation I will describe the syntheses of several atomically precise Cu NCs, including the organometallic NC, \([\text{Cu}_{20}(\text{CCPh})_{12}(\text{OAc})_6]\), which can also be described as \(N^* = 2\) superatom. Additionally, I will discuss their characterization by a variety of techniques, including XANES and EXAFS, as well as our initial efforts to synthesize NCs of Fe, Co, and Ni.

Hosted by Professor Megan Fieser

*The scientific community is invited*